Nuclear division in Ascomycetes.—GUILLIERMOND[17] has continued his studies on nuclear division in the Ascomycetes, which support in all essentials the conclusions of HARPER and contravene those of MAIRE (except as to Galactinia), though they are perhaps not irreconcilable with them. However, his descriptions are not so detailed as those of HARPER in his last paper on Phyllactinia, especially as it relates to the centers of spindle formation. In this paper GUILLIERMOND discusses chiefly the mother-cells of the asci and secretion. The species studied comprise *Pustularia vesiculosa*, *Aleuria cerea*, *Peziza rutilans*, *P. Catinus*, and *Galactinia succosa*. —B. M. DAVIS.

Soil waters.—CAMERON and BELL show[18] that as a rule the various mineral constituents of the soil solutions exist in sufficient concentration for the growth of crops, and that the magnitude of the concentrations is *practically the same for all soils*, because, generally speaking, soils contain all the common rock forming minerals, some of each species presenting its surfaces to the solvent action of the soil water; and on account of hydrolysis of the solutes this solvent action is continuous. The paper strongly supports the previous work of the Bureau of Soils which has been so much criticised, often on *a priori* grounds.—C. R. B.

Non-infection by rusts.—*Erysiphe graminis* has a number of biologic forms which are confined to special hosts. Thus conidia from the form on wheat will not infect barley and that on oats will not infect wheat. SALMON[19] has recently shown that the reason of the non-infection is not due to inability on the part of the conidia to germinate, but because the haustoria cannot establish relations with the cells of the host plant.—B. M. DAVIS.

Endoparasitic adaptation.—SALMON[20] shows that *Erysiphe graminis* adapts itself readily to an endophytic life. When spores are sown on a wound in oats or barley the mycelium ramifies in the intercellular spaces and haustoria are abundantly produced. Conidiophores develop profusely and perfect conidia where they arise on a free surface; and they even break through a weak barrier when they develop in intercellular spaces.—C. R. B.

Greening of seeds.— ERNST[21] finds that during the ripening of the fruit of *Eriobotrya japonica* the seeds become green, quite independent of light, by reason of the greening of the amyloplasts. The process begins at the plumule of the

[17] GUILLIERMOND, A., Remarques sur la karyokinèse des Ascomycètes. Ann. Mycol. **3**:343–361. *pls. 10–12.* 1905.

[18] CAMERON, F. K., and BELL, J. M., The mineral constituents of soils. U. S. Dept. Agric., Bur. Soils Bull. 30. pp. 70.

[19] SALMON, E. S., On the stages of development reached by certain biologic forms of Erysiphe in cases of non-infection. New Phytol. **4**:217. 1905. *pl. 5.*

[20] SALMON, E. S., On endophytic adaptation shown by *Erysiphe graminis* DC. under cultural conditions. Phil. Trans. Roy. Soc. London B. **198**:87–97. *pl. 6.* 1905.

[21] ERNST, A., Das Ergrünen der Samen von *Eriobotrya japonica.* Beihefte Bot. Centralbl. **19**[1]: 118–130. *pl. 2.* 1905.

embryo and progresses from this region to the inner and outer faces of the cotyledons. Complete greening, however, only follows illumination.—C. R. B.

The nucleus and secretion.—In the nectar glands on the stipules of the *Vicia Faba*, according to STOCKARD,[22] the nucleus does not give out granular material directly to the cytoplasm, but it transmits a substance which results in the formation of granules. Changes which occur in the cytoplasm during secretion seem to be controlled by the nucleus.—CHARLES J. CHAMBERLAIN.

Black rot of cabbage.—HARDING, STEWART, and PRUCHA[23] find much of the cabbage seed in the market contaminated with *Pseudomonas campestris*, which may survive and become a source of infection to seedlings. They advise sterilizing seed by soaking for fifteen minutes in $HgCl_2$ 1:1000, or in formalin 1:240.—C. R. B.

Movement of diatoms, etc.—JACKSON suggests[24] that the evolution of oxygen is the true cause of movements of diatoms, desmids, oscillaria, nostoc, etc. He has been able to imitate the movements by those compressed tablets and bits of aluminum of proper shapes which evolve gas.— C. R. B.

Anatomy of Claytonia.—A study of this genus by THEO. HOLM forms one of the Memoirs of the National Academy,[25] where it may be overlooked by botanists. It contains some of the accumulating details which a master hand must some day correlate.— C. R. B.

Apothecia of lichens.—GERTR. P. WOLFF[26] through some studies on the development of the apothecia in a number of lichens argues against LINDAU'S terebrator theory of the function of the trichogynes in lichens.—B. M. DAVIS.

Intercellular ducts.—The intercellular spaces in the cotyledons of Leguminosae function at the beginning of germination as conducting canals for aleurone which becomes dissolved and diffuses through them.[27]—C. R. B.

Mustiness.—The peculiar musty odor acquired by damp straw or corn is due, according to ROUSSEU,[28] to the oospora form of *Streptothrix Dassonvillei* and not to other of the fungus flora found thereon.—C. R. B.

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[22] STOCKARD, CHAS. R., The structure and cytological changes accompanying secretion in the nectar glands of *Vicia Faba*. Science **21**:204–5. 1906.

[23] HARDING, H. A., STEWART, F. C., PRUCHA, M. J., Vitality of the cabbage black rot germ on cabbage seed. N. Y. Agr. Exp. Sta. Bull. 251: 177–194. 1905.

[24] JACKSON, D. D., Movements of diatoms and other microscopic plants. Jour. Roy. Mic. Soc. **1905**: 554–7.

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[27] JOFFRIN, H., Rôle circulatoire des méats intercellulaires dans les cotylédons des Légumineuses au début de la germination. Rev. Gén. Bot. **17** : 421–2. 1905.

[28] BROCQ-ROUSSEU, Contributions a l'étude des causes qui provoquent l'odeur de moisi des grains et fourrages. Rev. Gén. Bot. **17**: 417–420. 1905.